1.1 Radio Astronomy

1.1.1 Maintenance and Calibration

- During recent RFC X/Ka supports (DSS-54 and DSS-55) it was noticed a problem with MarkIV video converter #1 (VC01) when configured to low frequencies. There are no working spares available at the station neither at JPL. VC01 has been swap by VC03 solving the problem.

- TDN blocks have been developed to perform system temperature zenith calibrations (zen_cal) at S/X and K bands with DSS-63 antenna. The block for S/X bands has been already successfully tested.

- Performance scripts (total and total.nmc) have been modified for Mark5 recorder only supports and to adjust to the new briefing format.

- Installed the DYMO LabelWriter 400 Turbo printer to print Field System labels. The printer has been installed at RAC60B PC using the Common UNIX Printing system (CUPS). At the PCFS60 PC, the configuration file skedf.ctl has been modified accordingly.

- CAD-MON-NMC-1251 to provide PCFS60 subsystem a read/write access to NMCFS has been already implemented.

1.1.2 Research and Development

From DOY 326 Host Country observations at DSS-63 antenna resumed. A workaround implemented and tested locally by the RA Department solved the problem originated due to an incompatibility between EAC XANT application and recent OP-C installation at DSS-63 (ATOT Development DOYs 308, 310, 315, 316, 325 and 330).

Installed the Interactive FITS file editor (fv) at RAC60B PC to check and modify FITS files generated by exp_control during spectroscopy observations.

1.1.3 Observations

1.1.3.1 Host Country Spectroscopy

During this month spectroscopy observations with DSS-63 antenna were carried out using the SPB500 spectrometer and the MarkIV data acquisition terminal. Pointing checks were performed using the Antenna Calibration and Measurement Equipment (ACME). Following Host Country projects were performed using DSS-63 antenna:

- **D63-S04:** study of ammonia (NH3) emission toward an evolved massive star. Position and frequency switching modes were used.

DOY	minutes scheduled	minutes used	Percent good data	Activity	comments
326	385	300	100	"GBRA Host Country D63-S04"	OK
331	190	150	100	"GBRA Host Country D63-S04"	OK

1.1.3.2 Interferometry

MDSCC participated in 2 Very Long Baseline Interferometric (VLBI) observations (480 min in total):

- RFC Clock Synchronization on DSS-65 (2 observations; 480 min): For first observation 100% data collected; performance of the system nominal. For second observation DSS-65 had a problem with the AZ drives, as a result 91% of the data was degraded (DR#M105159).